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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/891,022 | 06/25/2001 | Ali Najib Saleh | M-9830 US | 9442 |

7590 04/05/2005
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| EXAMINER |
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CHO, HONG SOL

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| ART UNIT | PAPER NUMBER |
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2662

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 09/891,022 | Applicant(s) SALEH ET AL. | |
| | Examiner Hong Cho | Art Unit 2662 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-112 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 14, 16-18, 29-35, 42-45, 57-63, 70, 72, 73, 85-91, 97, 98, 100 and 101 is/are rejected.
- 7) ☒ Claim(s) 8-13, 15, 19-28, 36-41, 46-56, 64-69, 71, 74-84, 92-96, 99 and 102-112 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>09262001, 01132004, 09242003</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Note: Some of Non Patent Literatures are not considered for the examination because they are not available.

Drawings

1. New corrected drawings are required in this application because legends are not complete for figures 1 and 7. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

2. The abstract of the disclosure is objected to because it includes the title of the invention. Correction is required. See MPEP § 608.01(b).

Claim Objections

3. Claims 18 and 94 are objected to because they depend on themselves.
For the purpose of examination, claim 18 is considered to be dependent on claim 17 and claim 94 on claim 92.

Claim Rejections - 35 USC § 112, *Second paragraph*

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 97 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 97 recites the limitation "said predetermined time interval and predefined threshold...". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(e) that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-3, 29-31, 57-59 and 85-87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azuma et al (U.S 6430150), hereinafter referred to as Azuma.

Re claims 1, 2, 29, 30, 57, 58, 85 and 86, Azuma discloses restoring traffic on alternate virtual path (*restoring a virtual path using an alternate physical path*, abstract).

Azuma discloses an alternate path computing part computing topology information to

find alternate paths by referring to the physical topology information (*identifying a plurality of nodes having a resource necessary to support virtual path and identifying an alternate physical path comprising ones of nodes with resources*, column 8, lines 13-17).

Re claims 3, 31, 59 and 87, Azuma discloses configuring an alternate physical path by establishing a communication connection between nodes with resources and provisioning virtual path over the alternate physical path (column 8, lines 20-26).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4-7, 14, 16-18, 32-35, 42, 44, 45, 60-63, 70, 72, 73, 88-91, 98, 100 and 101 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azuma in view of Finn et al et al (U.S 6728205), hereinafter referred to as Finn.

Re claims 4, 32, 60 and 88, Azuma discloses detecting a failure in a virtual path by receiving a failure message packet (column 8, lines 4-5) and restoring virtual path for mesh networks (column 1, lines 8-10). Azuma fails to disclose provisioning a virtual path on a physical path between a first and a second node of an optical network wherein each one of nodes is coupled to at least one another of nodes by a plurality of optical

links. Finn discloses network nodes connected through fiber optic cables and re-routing messages through a secondary path in case a primary path fails (column 16, lines 1-8). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Azuma to be used in optical network of Finn. The motivation is to get the benefit of high-speed network communications through fiber optic cables so that a prompt restoration is achieved through high-speed fiber optic communications.

Re claims 5, 6, 33, 34, 61, 62, 89 and 90, Azuma fails to disclose restoring a virtual path less than 2 seconds or 250 milliseconds. Finn discloses restoration time being about 50 milliseconds. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Azuma to be recovered less than 200 milliseconds by employing the concept of automatic protection switching in an optical network of Finn. The motivation is to provide fast restoration scheme and time so that switching to an alternate virtual path is transparent.

Re claims 7, 35, 63 and 91, Azuma discloses detecting a failure in a virtual path by receiving a failure message packet (column 8, lines 4-5).

Re claims 14, 16, 18, 42, 44, 70, 72, 98 and 100, Azuma discloses intermediate nodes receiving a failure message (column 5, lines 15-17).

Re claims 17, 45, 73 and 101, Azuma discloses acknowledging a failure message and changing a state of the virtual path to down and releasing resources of the virtual path (column 6, lines 41-51; column 8, lines 15-18).

Allowable Subject Matter

10. Claims 8-13, 15, 19-28, 36-41, 46-56, 64-69, 71, 74-84, 92-96, 99 and 102-112 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
11. Claims 8, 36, 64 and 92 are allowable over the prior art of record since the cited references taken individually or in combination fail to particularly teach or fairly suggest restoring a virtual path in an optical network wherein changing a state of virtual path to restoring and identifying an adjacent node with required bandwidth for a virtual path and forwarding a resource request packet to an adjacent node with required bandwidth for a virtual path and waiting for a resource response packet for a predetermined time interval and if the resource response packet is not received within a predetermined time interval, repeating the above procedure for a predetermined threshold times. It is noted that the closest prior art of record, Azuma shows a method of restoring a virtual path by receiving the information relating to the failed link. However, Azuma fails to suggest restoring a virtual path with the steps as described above.

Claims 15, 43, 71 and 99 are allowable over the prior art of record since the cited references taken individually or in combination fail to particularly teach or fairly suggest restoring a virtual path in an optical network wherein changing a state of virtual path to

down and forwarding a failure message to adjacent nodes comprising a virtual path and initiating a timer for receiving a response to the forwarded failure message and if the timer expires before the response to the forwarded failure message is received, release resources of the virtual path and if the response to the forwarded failure message is received before the timer expires, stop the timer and release resources of the virtual path.

It is noted that the closest prior art of record, Azuma shows a method of restoring a virtual path by receiving alarm messages relating to the failed link, whereupon a guard time is started and computation phase is started. However, Azuma fails to suggest restoring a virtual path with the steps as described above.

Claim 19 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly teach or fairly suggest restoring a virtual path in an optical network wherein if a resource request packet includes at least one error, copying the resource request packet to a first resource response packet and decrementing a hop count field in the first resource response packet and adding an error code to the first resource response packet and responding with the first resource response packet and if the resource request packet includes no error, allocating a resource to the virtual path and incrementing a hop count field in the resource request packet and forwarding the resource request packet to an adjacent node having a resource necessary to support the virtual path and waiting for a second resource response packet from the adjacent node. It is noted that the closest prior art of record, Azuma shows a method of restoring a virtual path by receiving alarm messages relating to the failed link. However, Azuma fails to suggest restoring a virtual path with the steps as described above.

Claim 23 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly teach or fairly suggest restoring a virtual path in an optical network wherein if a state of a virtual path is one of 'restoring' and 'deleting', copying a resource request packet to a first resource response packet and decrementing a hop count field in the first resource response packet and adding an error code to the first resource response packet and responding with the first resource response packet. It is noted that the closest prior art of record, Azuma shows a method of restoring a virtual path by receiving alarm messages relating to the failed link. However, Azuma fails to suggest restoring a virtual path with the steps as described above.

Claim 97 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US Patent (6026077) to Iwata
- US Patent (5974045) to Ohkura et al
- US Patent (6801504) to Ito

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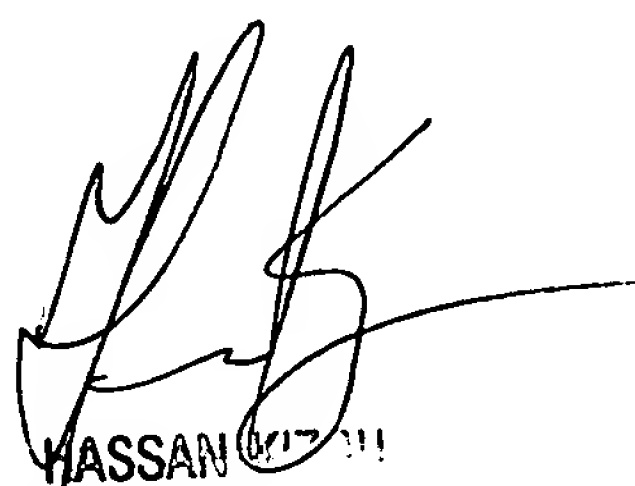
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong Cho whose telephone number is 571-272-3087.

The examiner can normally be reached on Mon-Fri during 7 am to 4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3088.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HC
Hong Cho
Patent Examiner
3-25-2005


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